

EDITION 8

BURNS AND GROVE'S

# THE Practice of Nursing Research

Appraisal, Synthesis, and Generation of Evidence

Jennifer R. Gray  
Susan K. Grove  
Suzanne Sutherland

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# Burns and Grove's the Practice of Nursing Research

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## Appraisal, Synthesis, and Generation of Evidence

EDITION 8

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St. Louis, Missouri 63043

BURNS AND GROVE'S THE PRACTICE OF NURSING RESEARCH:  
APPRAISAL, SYNTHESIS, AND GENERATION OF EVIDENCE, EIGHTH  
EDITION  
ISBN: 978-0-323-37758-4

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### **Library of Congress Cataloging-in-Publication Data**

Names: Gray, Jennifer, 1955- author. | Grove, Susan K., author. | Sutherland, Suzanne, author.

Title: Burns and Grove's the practice of nursing research: appraisal, synthesis, and generation of evidence / Jennifer Gray, Susan K. Grove, Suzanne Sutherland.

Other titles: Practice of nursing research

Description: Eighth edition. | St. Louis, Missouri: Elsevier, [2017] | Preceded by: The practice of nursing research / Susan K. Grove, Nancy Burns, Jennifer Gray. 7th ed. c2013. | Includes bibliographical references and index.

Identifiers: LCCN 2016030245 | ISBN 9780323377584 (pbk.)

Subjects: | MESH: Nursing Research—methods | Evidence-Based Nursing

Classification: LCC RT81.5 | NLM WY 20.5 | DDC 610.73072—dc23 LC record available at <https://lcn.loc.gov/2016030245>

**International Standard Book Number: 978-0-323-37758-4**

*Executive Content Strategist:* Lee Henderson

*Content Development Manager:* Billie Sharp

*Associate Content Development Specialist:* Laurel Shea

*Publishing Services Manager:* Julie Eddy

*Project Manager:* Abigail Bradberry

*Design Direction:* Margaret Reid

Printed in China

Last digit is the print number: 9 8 7 6 5 4 3 2 1



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# Dedication

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*To our readers and researchers, nationally and internationally, who will provide the science to develop an evidence-based practice for nursing.*

*To our family members for their constant input, support, and love, and especially to our husbands*

*Randy Gray,*

*Jay Suggs,*

*and*

*Jerry Sutherland*

**Jennifer, Susan, and Suzanne**

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# Preface

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Research is a major force in the nursing profession that is used to change practice, education, and health policy. Our aim in developing the eighth edition of *The Practice of Nursing Research: Appraisal, Synthesis, and Generation of Evidence* is to increase excitement about research and to facilitate the development of evidence-based practice for nursing. It is critically important that all nurses, especially those in advanced-practice roles (nurse practitioners, clinical nurse specialists, nurse anesthetists, and nurse midwives) and those assuming roles as administrators and educators, have a strong understanding of the research methods conducted to generate evidence-based knowledge for nursing practice. Graduate and undergraduate nursing students and practicing nurses must be actively involved in critically appraising and synthesizing research evidence for the delivery of quality, cost-effective care. This text provides detailed content and guidelines for implementing critical appraisal and synthesis processes. The text also contains extensive coverage of the research methodologies—quantitative, qualitative, mixed methods, and outcomes—commonly employed in nursing. Doctoral students might use this text to facilitate their conduct of quality studies essential for generating nursing knowledge.

The depth and breadth of content presented in this edition reflect the increase in research activities and the growth in research knowledge since the previous edition. Nursing research is introduced at the baccalaureate level and becomes an integral part of graduate education (master's and doctoral) and clinical practice. We hope that this new edition might increase the number of nurses at all levels involved in research activities, so as to improve outcomes for nursing practice.

This eighth edition is written and organized to facilitate ease in reading, understanding, and implementing the research process. The major strengths of this text are as follows:

- State-of-the-art coverage of evidence-based practice (EBP)—a topic of vital and growing importance in a healthcare arena focused on quality, cost-effective patient care.
- Addition of a chapter on mixed methods research, a methodology that is employed today with increasing frequency, reflecting the modern proliferation of multifaceted problems.
- A clear, concise writing style for facilitation of student learning that is consistent throughout all chapters.
- Comprehensive coverage of quantitative, qualitative, mixed methods, and outcomes research strategies, with examples provided from published studies.
- A balanced coverage of qualitative and quantitative research methodologies.

- An introduction to ethical issues related to genomics research.
- Electronic references and websites that direct the student to an extensive array of information that is important for conducting studies and using research findings in practice.
- Rich and frequent illustration of major points and concepts from the most current nursing research literature, emphasizing a variety of clinical practice areas.
- A strong conceptual framework that links nursing research with EBP, theory, knowledge, and philosophy.

Our text provides a comprehensive introduction to nursing research for graduate and practicing nurses. Of particular usefulness at the master's and doctoral level, the text provides not only substantive content related to research but also practical applications based on the authors' experiences in conducting various types of nursing research, familiarity with the research literature, and experience in teaching nursing research at various educational levels.

The eighth edition of this text is organized into 5 units and 29 chapters. Unit One provides an introduction to the general concepts of nursing research. The content and presentation of this unit have been designed to introduce EBP, quantitative research, and qualitative research.

Unit Two provides an in-depth presentation of the research process for quantitative, qualitative, mixed methods, and outcomes research, including two detailed chapters on measurement. As with previous editions, this text provides extensive coverage of study designs and statistical analyses.

Unit Three addresses the implications of research for the discipline and profession of nursing. Content is provided to direct the student in conducting critical appraisals of both quantitative and qualitative research. A detailed discussion of types of research synthesis and strategies for promoting EBP is provided.

Unit Four provides students and practicing nurses the content they require for implementation of actual research studies. This unit includes chapters focused on data collection and management, statistical analysis, interpretation of research outcomes, and dissemination of research findings.

Unit Five addresses proposal development and seeking support for research. Readers are given direction for developing successful research proposals and seeking funding for their proposed research.

The changes in the eighth edition of this text reflect advances in nursing research and also incorporate comments from outside reviewers, colleagues, and students. Our desire to promote the continuing development of the profession of nursing was the incentive for investing the time and energy required to develop this new edition.

## New Content

The eighth edition provides current comprehensive coverage of nursing research and is focused on the learning needs and styles of today's nursing students and practicing nurses. Several exciting new areas of content based on the changes and expansion in the field of nursing research are included in this edition. Some of the major changes from the previous edition are as follows:

- **Chapter 1**, “Discovering the World of Nursing Research,” provides a stronger introduction to EBP and includes an example of the most current evidence-based guidelines for the management of hypertension.
- **Chapter 2**, “Evolution of Research in Building Evidence-Based Nursing Practice,” has a new figure for demonstrating the levels of research knowledge. In addition, this chapter introduces the most current processes for synthesizing research knowledge, which are systematic reviews, meta-analyses, meta-syntheses, and mixed-method systematic reviews.
- **Chapter 3**, “Introduction to Quantitative Research,” was rewritten to provide a clearer overview of the quantitative research process and the role of iteration in the design process, for the beginning researcher. It also includes the concept of theoretical substruction and the application of this strategy.
- **Chapter 5**, “Research Problem and Purpose,” was rewritten to reflect practical considerations of how to identify a problem area and define the purpose of a study.
- **Chapters 6, 7, and 8** have been reordered, reflecting a more logical sequencing.
- **Chapter 6**, “Objectives, Questions, Variables, and Hypotheses,” has been rewritten to guide the student in how to word research questions for various quantitative and qualitative designs, identify types of variables, write conceptual and operational definitions, and construct various types of hypotheses.
- **Chapter 7**, “Review of Relevant Literature,” provides practical steps in searching the literature, synthesizing the information, and writing the review.
- **Chapter 9**, “Ethics in Research,” features new coverage of genomics research, recent ethical violations, and government regulations. This chapter also details the escalating problem of scientific misconduct in all healthcare disciplines and the actions that have been taken to manage this problem.
- **Chapters 10 and 11** have been rewritten and re-organized, presenting noninterventional designs in one chapter and interventional designs in the other.
- **Chapter 10** “Quantitative Methodology: Noninterventional Designs and Methods” presents concepts pertinent to noninterventional research, including specifics of design validity. It also describes and provides examples and new illustrations for various descriptive and correlational designs used frequently

in nursing research, or potentially useful for healthcare research. Its algorithms for differentiating among the four major quantitative design types, and for selecting specific designs from among both descriptive and correlational methods, have been revised.

- **Chapter 11** “Quantitative Methodology: Interventional Designs and Methods” presents concepts pertinent to interventional research, including descriptions of specific threats to validity for interventional studies. It also describes and provides new examples and illustrations for various experimental and quasi-experimental designs used frequently in nursing research, or potentially useful for healthcare research. Its algorithms for selecting specific interventional designs from among both experimental and quasi-experimental methods, have been revised.
- **Chapter 12**, “Qualitative Research Methods,” describes each step of the research process from writing the problem statement to interpreting the findings for qualitative studies. In addition to the data collection methods of observing, interviewing, and conducting focus groups, content was added about web-based research and other electronic means of collecting qualitative data.
- **Chapter 13**, “Outcomes Research,” a unique feature of our text, was rewritten to extend the revisions begun by Dr. Diane Doran, a leading authority in the conduct of outcomes research, for edition 7, and to update content so that it reflects current trends in outcomes research. More detail in content is included for the foundational concepts described by Donabedian, including his theoretical bases for outcomes research and his own history. The interplay between outcomes research and EBP, from standpoints of quantitative and qualitative research, has been clarified and is displayed in a new diagrammatic model.
- **Chapter 14**, “Mixed Methods Research,” is a new chapter and proposes three broad categories of mixed methods research: exploratory sequential design, explanatory sequential design, and convergent concurrent designs. The often-missing steps of integrating the findings across methods is newly described.
- **Chapter 15**, “Sampling,” was revised to reflect the most current coverage of sampling methods and the processes for determining sample size for quantitative and qualitative studies in nursing. Discussion of sampling methods and settings are supported with examples from current, relevant studies.
- **Chapter 16**, “Measurement Concepts,” features detailed, current information for examining the reliability and validity of measurement methods and the precision and accuracy of physiological measures used in nursing studies. The discussions of sensitivity, specificity, and likelihood ratios are expanded and supported with examples from current studies.
- **Chapter 17**, “Measurement Methods Used in Developing Evidence-Based Practice,” provides more current detail on the use of physiological measurement methods in research. A new diagram is added to promote the

use of Q-sort methodology in studies.

- [Chapter 18](#), “Critical Appraisal of Nursing Studies,” now includes consistent steps for the critical appraisal of quantitative and qualitative studies: (1) identifying the steps or elements of the research process; (2) determining study strengths and limitations; and (3) evaluating the credibility, trustworthiness, and meaning of study findings for future research, nursing knowledge, and practice.
- [Chapter 19](#), “Evidence Synthesis and Strategies for Implementing Evidence-Based Practice,” has undergone revision to promote the conduct of research syntheses and the use of best research evidence in nursing practice. The chapter contains current, extensive details for conducting systematic reviews, meta-analyses, meta-syntheses, and mixed-method systematic reviews.
- Major revisions have been made in the chapters focused on statistical concepts and analysis techniques ([Chapters 21](#) through [25](#)). The content is presented in a clear, concise manner and supported with examples of analyses conducted on actual clinical data. Dr. Daisha Cipher, a noted statistician and healthcare researcher, provided the revisions of these chapters.
- [Chapter 26](#), “Interpreting Research Outcomes,” has been revised, using a design validity-based model as underpinning for identification of limitations, generalizations, and recommendations for further research.

## Student Ancillaries

An **Evolve Resources website**, which is available at <http://evolve.elsevier.com/Gray/practice/>, includes the following:

- Interactive Review Questions, which have been revised so that more questions are now at the application, analysis, or synthesis level.

## Instructor Ancillaries

The **Instructor Resources** are available on Evolve, at <http://evolve.elsevier.com/Gray/practice/>. Instructors also have access to the online student resources. The Instructor Resources feature a revised Test Bank of more than 600 items reflecting eighth edition changes and revisions, PowerPoint presentations totaling more than 700 slides, updated to eighth edition changes and revisions, and an Image Collection consisting of the images from the text.



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# Acknowledgments

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Writing the eighth edition of this textbook has allowed us the opportunity to examine and revise the content of the previous edition based on input from a number of scholarly colleagues, the literature, and our graduate and undergraduate students. A textbook such as this requires synthesizing the ideas of many people and resources.

We also want to thank the people who contributed to this new edition. Dr. Daisha Cipher provided an excellent revision of [Chapters 21](#) through [25](#) with her strong statistical expertise and ability to explain data analysis in an understandable way. We also thank Dr. Kathy Daniel for her contribution of a current, quality quasi-experimental research proposal to [Chapter 28](#). Our gratitude is also extended to Dr. Nancy Burns, an original co-creator of *The Practice of Nursing Research*, who has a passion for nursing research.

We also have attempted to extract from the nursing and healthcare literature the essence of knowledge related to the conduct of nursing research. Thus, we would like to thank those scholars who shared their knowledge with the rest of us in nursing and who have made this knowledge accessible for inclusion in this textbook. The ideas from the literature were synthesized and discussed with our colleagues and students to determine the revisions needed for the eighth edition.

We also express our appreciation to the administrators and fellow faculty at our respective universities for their support during the long and time-consuming experience of revising a book of this magnitude. We particularly value the questions raised by our students regarding the content of this text, which allow us a unique view of our learners' perceptions.

We also recognize the excellent reviews of the colleagues who helped us make important revisions in this text. These reviewers are located in large and small universities across the United States and provided a broad range of research expertise.

On a personal level, we acknowledge that such an extensive project has an impact on all aspects of our lives. We are indebted to our families and friends for patient understanding and for their efforts to maintain the status quo of our "real lives."

Finally, we thank the people at Elsevier, who have been extremely helpful to us in producing a scholarly, attractive, appealing text. We extend a special thank-you to the people most instrumental in the development and production